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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/520,677	01/11/2005	Yoshihito Yaginuma	1830.1003	9266

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EXAMINER

WHITE, EVERETT NMN

ART UNIT	PAPER NUMBER
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1623

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02/02/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/520,677	Applicant(s) YAGINUMA ET AL.	
	Examiner EVERETT WHITE	Art Unit 1623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 November 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 16 and 26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 16 and 26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 6, 2009 has been entered.

2. The amendment filed November 6, 2009 has been received, entered and carefully considered. The amendment affects the instant application accordingly:

- (A) Claims 4-15 and 17-25 have been canceled;
 - (B) Claim 26 has been added;
 - (C) Comments regarding Office Action have been provided drawn to:
 - (I) 103(a) rejection, which is rendered moot by new ground of rejection over newly cited US Patent.
3. Claims 1-3, 16 and 26 are pending in the case.

Foreign Priority Claimed

4. This application is a 371 of PCT/JP03/08793 International Filing Date: July 10, 2003 published in Japanese, which claims foreign priority to Japan 2002-204740 under 35 U.S.C. 119(a)-(d). It is noted that PCT/JP03/08793 and Japan 2002-204740 (July 12, 2002) are in Japanese, no translation into English has been provided.

Claim Rejections - 35 USC § 103

New Ground of Rejection

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
6. Claims 1-3 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cavaille et al (US Patent No. 6,103,790, newly cited) in view of Battista (US Patent No. 3,146,168, already of record) or Koch et al (WO 99/02568, already of record).

Applicants claim a water-dispersible cellulose, the water dispersible cellulose being derived from a plant cell wall having starting cellulosic substance, wherein the starting cellulosic substance has an α -cellulose content of 60-90% by weight and an average degree of polymerization of 400-1300, or the starting cellulosic substance has α -cellulose content of 60-100% by weight and an average degree of polymerization of greater than 1300, the water dispersible cellulose being crystalline having a crystallinity of 55% or more, and fine fibrous without entanglement between fibers, and the water-dispersible cellulose having substantially no branched bundles of fiber, the water-dispersible cellulose comprising 30% by weight or more of a component stably suspensible in water, wherein the component comprises a fibrous cellulose having a

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length (major axis) of 0.5-30 μm and a width (minor axis) of 2-600 nm, and a length/width ratio (major axis/minor axis) of 20-400, and the water-dispersible cellulose having a loss tangent of less than 1, when made into a 0.5% by weight aqueous dispersion.

The Cavaille et al patent discloses cellulose microfibrils having an average length greater than a micrometer, a diameter between approximately 2-30 nm, a length to diameter ratio greater than 60, and whose degree of crystallinity is greater than 70% (see column 1, lines 42-51). See column 3, lines 46-48 of the Cavaille et al patent wherein the cellulose microfibrils thereof can be used in aqueous dispersions produced by homogenizers. The instantly claimed water-dispersible cellulose having a loss tangent of less than 1 is an inherent property of the cellulose microfibril aqueous dispersion of the Cavaille et al patent since the particle size of the cellulose microfibril of the Cavaille et al patent falls within size of the cellulose particles recited in instant Claim 1.

The instantly claimed water-dispersible cellulose differs from the cellulose microfibril aqueous dispersion of the Cavaille et al patent by claiming that the water dispersible cellulose is derived from a plant cell wall having starting cellulosic substance, wherein the starting cellulosic substance has an α -cellulose content of 60-90% by weight and an average degree of polymerization of 400-1300, or the starting cellulosic substance has α -cellulose content of 60-100% by weight and an average degree of polymerization of greater than 1300.

The Battista patent shows that it is within the ordinary skill of a practitioner of the instant art to obtain a water-dispersible cellulose from a cellulose substance having the starting properties as instantly claimed by disclosing cellulose crystallite aggregates from wood pulp having 93% alpha cellulose (see column 2, lines 54 to 56). See column 3, lines 28-30 of the Battista patent wherein it is indicated that the aggregates thereof provide stable dispersions.

The Koch WO publication also shows that cellulose having the instantly claimed degree of polymerization is known in the art by disclosing a cellulose compound having a degree of polymerization of approximately 1500 (see abstract).

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One of ordinary skill in this art would be motivated combine the teaching of the Cavaille et al patent with the teachings of the Battista patent and Koch et al publication since each of the documents disclose industrial applications for cellulose products.

It would have been obvious to one of ordinary skill in the art at the time the invention was made for the starting material of the cellulose microfibrils obtained in the Cavaille et al patent to be derive from a cellulose substance having an α -cellulose content of 93% and a degree of polymerization of greater than 1500 in view of the recognition in the art, as evidenced by the Battista patent and Koch publication that such properties of cellulose products increases the effectiveness of the cellulose for various industrial applications.

7. Applicant's arguments with respect to Claims 1-3 and 26 have been considered but are moot in view of the new ground(s) of rejection.

New Ground of Rejection

8. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cavaille et al (US Patent No. 6,103,790, newly cited) in view of Battista (US Patent No. 3,146,168, already of record) or Koch et al (WO 99/02568, already of record) as applied to Claims 1-3 and 26 above, and further in view of Kajita et al (JP PublicationNo. 58013713 A).

Applicants claim the water-dispersible cellulose of Claims 1 and 2 having a loss tangent of less than 1 and less than 0.6, when made into a 0.5% by weight aqueous dispersion.

The information discussed in the above rejection in regard to the Cavaille et al patent in view of the Battista patent or the Koch et al publication is incorporated into the current rejection, which is not repeated herein. These references do not specifically discussed the loss tangent of the cellulose product as instantly claimed in Claims 1 and 2.

The Kajita et al publication discloses fiber manufactured from cellulose derivative solutions in a liquid crystal state, which suggests fibrous cellulose comprising crystalline components as instantly claimed. Kajita et al discloses that the cellulose derivative

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solution thereof comprises a mechanical loss tangent of 0.06, which is within the range of the loss tangent disclosed in the instant Claims 1 and 2 of being less than 1 and less than 0.6.

One of ordinary skill in this art would be motivated combine the teaching of the Cavaille et al patent in view of the Battista patent or the Koch et al publication with the Kajita et al publication since each of the documents disclose industrial applications for cellulose products.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the cellulose microfibril aqueous dispersion of the Cavaille et al patent in view of the Battista patent or the Koch et al publication with a cellulose compound having a loss tangent of less than 0.6 in view of the recognition in the art, as evidenced by the Kajita et al publication that such properties of cellulose products increases the dispersible stability of the product when formed into a suspension.

9. Applicant's arguments with respect to Claims 1 and 2 have been considered but are moot in view of the new ground(s) of rejection.

New Ground of Rejection

10. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cavaille et al (US Patent No. 6,103,790, newly cited) in view of Battista (US Patent No. 3,146,168, already of record) or Koch et al (WO 99/02568, already of record) as applied to Claims 1-3 and 26 above, and further in view of Dinand et al (US Patent No. 5,964,983).

Applicants claim a food composition comprising the water-dispersible cellulose of Claim 1 or Claim 2.

The information discussed in the above rejection in regard to the Cavaille et al patent in view of the Battista patent or the Koch et al publication is incorporated into the current rejection, which is not repeated herein. These references do not specifically discussed a food composition.

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The Dinand et al patent discloses cellulose products thereof having applications as a thickener to stabilized dispersions, emulsions and suspensions, for low calorie food products, low fat or low cholesterol food products (see column 1, lines 14-16). The Dinand et al patent discloses the use of microfibrillated cellulose having a cross-section between about 2 nm and about 4 nm.

One of ordinary skill in this art would be motivated combine the teaching of the Cavaille et al patent in view of the Battista patent or the Koch et al publication with the teaching of the Dinand et al patent since each of the documents disclose industrial applications for cellulose products.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the cellulose microfibrils of the Cavaille et al patent in view of the Battista patent or the Koch et al publication with a cellulose product that has applications for food products in view of the recognition in the art, as evidenced by the Dinand et al patent that such cellulose products are effective as a thickener to stabilize dispersions for low calorie, low fat and low cholesterol food products.

11. Applicant's arguments with respect to Claim 16 have been considered but are moot in view of the new ground(s) of rejection.

Summary

12. All the pending claims (Claims 1-3, 16, and 26) are rejected.

Examiner's Telephone Number, Fax Number, and Other Information

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Everett White whose telephone number is 571-272-0660. The examiner can normally be reached on 9:30 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shaojia A. Jiang can be reached on 571-272-0627. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Everett White/
Examiner, Art Unit 1623

/Shaojia Anna Jiang/
Supervisory Patent Examiner, Art Unit 1623